To: Vermont Public Service Board

From: Sandra Levine, Conservation Law Foundation
James Moore, Vermont Public Interest Research Group

Date: May 16, 2006

Re: EEU Budget Recommendations

Conservation Law Foundation (CLF) and Vermont Public Interest Research Group (VPIRG) recommend tripling the efficiency utility budget to $52.5 million per year by 2008. This level of funding will provide significant benefits to Vermont ratepayers and utility system stability and reliability. As a result, Vermont will be better prepared for the uncertain energy future that lies ahead. This funding level is well supported by all the analysis that was conducted, and is required by Vermont law.

Legal Requirements:
A very significant increase in the efficiency utility budget is required by Vermont law. Legislation passed last year removed the cap that had previously been in place for the efficiency utility budget. This cap had limited spending to $17.5 million per year. As a result of this funding limitation, Vermont has missed an opportunity to acquire many available, cost-effective efficiency resources. As the Board noted in 2002, Vermont would need to spend three to four times more money on efficiency to achieve the available savings from efficiency. Docket #6777, Order of 12/30/02 at 13. In removing the funding cap, Act 61 made clear that Vermont is to take full advantage of the existing energy efficiency potential as soon as possible.

Vermont law **requires** the budget be set to capture all cost effective efficiency measures. Title 30 V.S.A. § 209(d)(4) specifically states:

- *The charge established by the board ... shall be in an amount determined by the board by rule or order that is consistent with the principles of* ***least cost integrated planning*** *as defined in section 218c of this title.*

- *As circumstances and programs evolve, the amount of the charge shall be reviewed for unrealized energy efficiency potential and shall be adjusted as necessary in order to realize* ***all reasonably available, cost-effective energy efficiency savings.***

30 V.S.A. § 209(d)(4) (emphasis added).

This law was further updated this year in H.859 which was passed by the Vermont Legislature and is being sent to the Governor for his signature. It provides priority standards for setting the efficiency budget that show the imperative to significantly increase the budget.

- *In setting the amount of the charge and its allocation, the board shall determine an appropriate balance among the following objectives:, provided, however, that particular emphasis shall be accorded to the first four of these objectives: reducing the size of future power purchases; reducing the generation of greenhouse gases; limiting the need to upgrade the state's transmission and distribution infrastructure; minimizing the costs of electricity;* ....

30 V.S.A. § 209(d)(4) as amended by H.859 (new language underlined).

Other provisions of Vermont law require harnessing all available efficiency measures. Vermont utilities are required to do least cost planning and to make investments that will result in electricity being provided to Vermont at the lowest possible cost. 30 V.S.A. § 218c. Other statutory provisions address energy efficiency and direct the Board, the Department and the utilities to take advantage of all cost effective efficiency opportunities. 30 V.S.A. § 209(c). To the extent the efforts of the efficiency utility (EEU) satisfy the distribution utilities' obligations to invest in efficiency, the EEU budget must be funded at a level that will capture all cost effective efficiency. 30 V.S.A. § 290(d)(2). . Many previous Public Service Board decisions also address the value of efficiency investments and how those investments result in significant cost savings to Vermonters. See Docket #5270 (4/16/90) (potential of efficiency); Docket #5980 (9/30/99) (establishing energy efficiency charge); Docket #6777 (12/30/02) (value of efficiency measures).

Recent policy endorsed by Vermont also supports significant increases in efficiency investments. At the recent *30th Annual Conference of the New England Governors and the Eastern Canadian Premiers* held in Newport, Rhode Island on May 11-13, 2006, a "Resolution Concerning Energy" was passed (attached). This resolution specifically provides:

> ***NOW, THEREFORE, BE IT RESOLVED THAT*** *the Conference of New England Governors and Eastern Canadian Premiers, will seek to mitigate future growth in electric energy demand through energy efficiency and demand response.*

In light of this policy, specifically endorsed by Vermont, supporting a level of efficiency investment that will meet future growth in energy demand with efficiency resources is required.

Combined, Vermont statutes and previous Board orders establish the legal requirement to set the EEU budget at a level that will enable Vermont to obtain all cost effective energy efficiency.

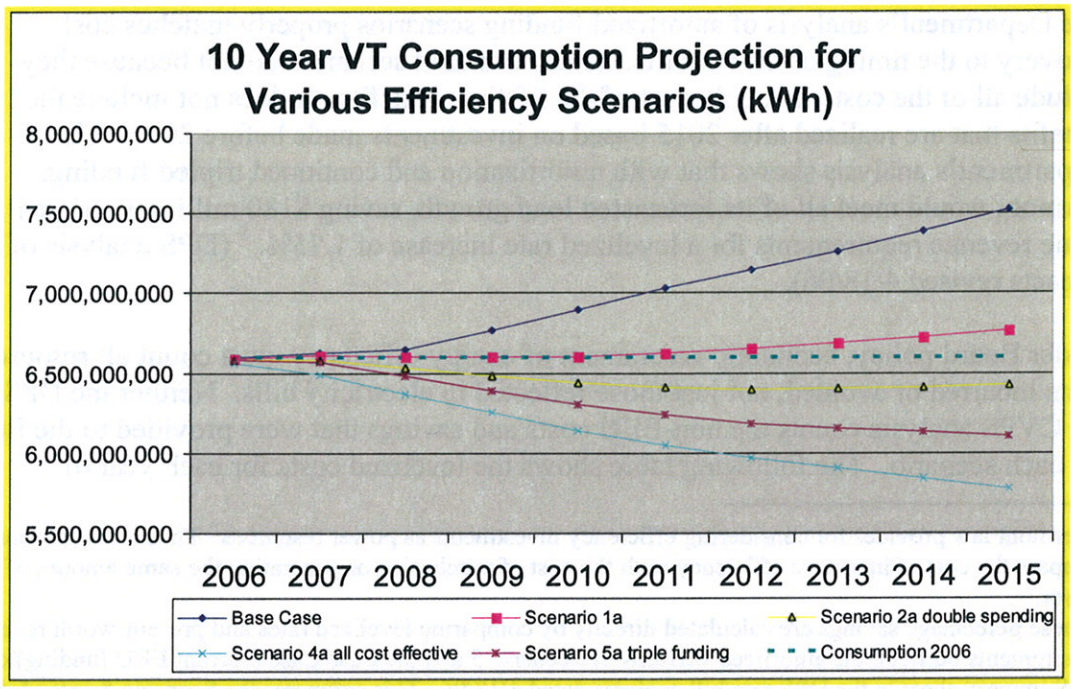
Tripling the Budget will Obtain the Most Benefit for the Lowest Rate Impact
In the course of this proceeding, a number of scenarios were evaluated. These included an extremely modest increase to the budget (scenario 1), doubling the budget (scenario 2), adding all possible efficiency over three years (scenario 4); and tripling the budget (scenario 5).

Of all the analyses completed, tripling the budget provides the most efficiency benefits at the lowest cost and would clearly satisfy all the legal requirements and policy considerations that must be evaluated in appropriately setting the EEU budget. First, it clearly and best addresses the recent legislative directive to place "particular emphasis" on the objective of "minimizing the costs of electricity," in setting the efficiency budget. 30 V.S.A. § 209(d)(4) as amended by H.859 (2006). Second, in providing the greatest benefit at the lowest cost, tripling the budget **lowers electric bills** and therefore provides the best means to address the impact on retail electric rates, which is one of many considerations set forth in 30 V.S.A. § 209(e).[1]

Lower Power Costs

Tripling the efficiency budget would eliminate the need to build or purchase approximately 200 MW worth of generation by 2015 and would save a cumulative 8,062,153,109 kWh, reducing Vermont's electricity demand by 19% over the next ten years (based on DPS analysis of rate and bill impacts). Tripling the budget reduces demand over current levels as well as avoids future increases in demand. This level of demand reduction clearly satisfies the objectives the Legislature recently required the Board to place particular emphasis on in setting the efficiency budget. 30 V.S.A. § 209(d)(4) as amended by H.859 (2006).

The following chart shows the ten year projected electricity demand curves for the base case and all scenarios according to DPS analysis.



[1] Under Vermont law, "the impact on retail electric rates" of efficiency programs is to be considered in setting the appropriate budget, but is only one of 14 provisions in the statute, 30 V.S.A. § 209(e), and is not an objective on which the Board is to place "particular emphasis" under the recently passed legislation (H.859).

With energy prices currently high, the significant financial benefits to reducing demand cannot be overstated. Reducing demand in the next few years avoids purchasing new power at very high costs. It also affords utilities the near-term opportunity to sell excess power into the regional wholesale market, and the long-term opportunity to replace portions of the expiring HQ and retiring Vermont Yankee power with low-cost efficiency.

Tripling the efficiency budget allows significant power savings at an affordable price. Compared to a power contract or new generation, the resources acquired through tripling the efficiency budget amount to purchasing a long term fixed price power contract for 3 cents per KWh. If these same terms were offered to Vermont as a new power supply for fourteen years, the State would quickly seize this opportunity as it should now by increasing the efficiency budget.[2]

Lower Electric Bills

To evaluate costs and benefits of efficiency, it is the overall bill, or equivalently, the revenue-requirement impacts that should be evaluated rather than rates alone. This is consistent with principles of least cost planning and providing electricity to customers at the lowest cost. Under the rate impact analysis prepared by both the DPS and CVPS **customer bills will go down** as a result of tripling the efficiency utility budget. The DPS analysis shows a **3.2 percent bill reduction** with a levelized rate increase of 1.5%.[3] The CVPS analysis shows an average **2.5 percent bill reduction**, with average rates increasing 4.4%. [4]

The Department's analysis of amortized funding scenarios properly matches cost recovery to the timing of the benefits. Its unamortized scenarios do not because they include all of the costs, but only part of the lifetime benefits. It does not include the benefits that are realized after 2015 based on investments made before 2015. The Department's analysis shows that with amortization and continued tripled funding, Vermont would meet all of its forecasted load growth, saving $180 million in present value revenue requirements for a levelized rate increase of 1.75%. [5] (DPS analysis of rate impacts revised 4/18/06).

Under Board policy, economic assessment of energy-efficiency must count all resource costs incurred or avoided, not just those reflected in electricity bills. Neither the DPS nor the CVPS analysis counts the non-EEU costs and savings that were provided to the Board for each scenario. The following table shows the levelized costs for each year of

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[2] Vermont law provides for considering efficiency investments as power resources. Thus it makes sense to compare the cost of increased efficiency with the cost of purchasing or generating the same amount of power.

[3] These percentage savings are calculated directly by comparing levelized rates and present-worth revenue requirements between the amortized versions of Scenario 5 and the Base Case (current EEU funding) on the Summary sheet in the DPS rate/bill analysis dated 4/18/06. This compares the Scenario 5 extended to 10 years and amortized DSM costs against the Base Case extended to 10 years and amortized DSM costs.

[4] These percentages are calculated from present worth of bills and levelized rates for the amortized versions of Scenario 5 the EVT Current Contract in the Bills Rates sheet of the revised CVPS analysis dated 4/21/06.

[5] This compares Scenario 5 extended to 10 years and amortized DSM costs against the Base Case for 3 years and expensed DSM costs and is higher than a comparison of both for 10 years.

Scenario 5 of EEU costs, non-EEU costs and combined EEU and non-EEU costs. Non-EEU costs include participant, 3rd party, O&M, fuel and water costs or cost savings.[6] The non-EEU costs are negative because of O&M, fuel and water savings more than offset the participant costs.

Levelized Costs of Implementing Scenario 5 (2006$)

	2006	2007	2008
EEU Costs	$0.0312	$0.0308	$0.0304
Non-EEU Costs	($0.0058)	($0.0087)	($0.0125)
Combined EEU and Non-EEU Costs	$0.0255	$0.0221	$0.0180

Based on this analysis, efficiency resources are available for a utility only cost of about 3 cents/kWh. The cost is further reduced to about 2 cents/kWh if the non-EEU costs and savings are also included. This includes both the third-party costs and the third party savings that result from the efficiency investments.

Amortization

The average lifetime for installed efficiency measures estimated by Efficiency Vermont is 14.4 years. In effect, with each year of EEC collection and EVT operation, Vermont currently pre-pays an annual contract for 10 MW of electricity savings over 14.4 years, rather than pay monthly capacity and energy charges under a supply contract. This practice raises rates unnecessarily the year the resource is acquired. Amortization spreads the costs of energy-efficiency investments over the life of the savings, just as a mortgage allows a homeowner to spread the purchase price over 360 monthly payments. The Department's analysis demonstrates how amortization would affect rates from tripled EEU funding in Scenario 5. Levelized rates from continued triple funding *without* amortization increases rates an average of 3.9% between 2006 and 2015. With amortization the increase is reduced to only 1.75%. (DPS analysis of rate impacts revised 4/18/06). Any concern about rate impacts would be more than adequately addressed by amortization of these costs. Amortization allows Vermont to acquire greater efficiency resources and the undeniably large net economic benefits these resources provide without straining rates. It also better matches the cost of these resources with the timing these benefits are realized. Amortization treats efficiency resources more like traditional power supplies. The entire cost of a new generation facility is not reflected in one year, but is amortized over the life of the power supply.

Amortization could also be used as a shorter term financing option. Under the recently passed Regional Greenhouse Gas Initiative (RGGI) revenue from the sale of carbon credits starting in 2009 would reduce the cost of efficiency and could be used to pay down amortization balances early and reduce debt costs.

New Potential Study Supports Tripling Efficiency Budget

The new potential study prepared by the DPS understates the available potential, but still clearly demonstrates the benefit of significant new investment in efficiency and supports

[6] Levelized cost calculations used a 6.8% real discount rate, consistent with the present value non-EVT costs provided to the DPS for the rate impact analysis.

tripling the efficiency budget. The study understates the potential cost effective efficiency in two key areas. First, it evaluates only efficiency that is obtained with a 50% cost incentive. This is an artificial constraint which inevitably limits the amount of cost-effective efficiency revealed by the study. Clearly some efficiency would still be cost-effective if a higher incentive is paid. The potential study thus understates the cost-effective efficiency potential. The report also misrepresents the "free rider" issue. The report states that free riders "dilute the market impact of program dollars." (pg. 3). The report attempts to claim that more aggressive financial incentives will **not** add new participants or net savings. This is completely false. It takes no incentive for free-riders (people who would install efficiency measures anyway) to install efficient equipment. By increasing the incentive, more people are convinced to install the efficient equipment. Since the number of people that would have installed the equipment without an incentive remains the same, as the total number of participants is increased with higher incentives, the free rider percentage decreases and the net savings induced by the program increases. Second, the potential study provides for a very limited set of retrofit measures. Throughout the country, retrofit options have been proven to provide significant energy and cost savings. When compared to earlier potential studies, the limited consideration of retrofit opportunities is telling. While an attempt was made by the DPS in its filing of Appendix G to account for more retrofit options, this analysis is deeply flawed. It accounts for all the costs of early retirement but fails to properly account for the savings that result from these costs. The conclusions in the potential study are thus inherently suspect and clearly understate the amount of savings that is possible. Quite simply it does not provide for an evaluation of "all reasonably available cost effective energy efficiency."

Even with the limitations of the potential study, it still supports tripling the efficiency budget. It shows that spending $30.5 million per year would provide a 19% reduction in demand a decade from now. (DPS revised potential study at pg. 8, 5/10/06) Tripling the budget would enable obtaining greater retrofit options and providing greater incentives if they are needed, and still cost effective. It would also make more savings available sooner. This allows Vermont to capture what the DPS states is the achievable potential while prices for electricity are high, in the early years of the ten year study period, and before Vermont faces the expiration of existing power supply contracts.

Three Year Budget should be Set

The effort that has gone into establishing this budget provides a good framework for future budgets. Vermont has had experience with the efficiency utility now for six years. Based on this experience, the Energy Efficiency Utilities, overseen by the Board, the DPS, and the Advisory Board, can map out a reliable course of increased activity from existing programs, and the introduction and ramp up of new programs. At this time, it makes sense to set a budget for a three year period instead of redoing it every year, provided the budget is set to capture all cost effective efficiency potential. A three year budget would allow investment in longer term efficiency measures and would reduce the administrative burden on the Board as well as the other parties involved in establishing a fair budget. Continued failure to set a budget that allows the capture of all cost effective efficiency measures should not be tolerated.

Policy Constraints

As a practical matter, CLF and VPIRG recommend the Board adopt the policy constraints evaluated in scenario 5 and incorporate them into the tripling of the efficiency budget. These provide that the first 2/3 of the budget would follow the existing policies on how the money is spent and would support equity among geographic regions and customer classes. The remaining 1/3 would be targeted to obtain the best and most cost-effective energy efficiency benefits. This provides a reasonable balance among the various considerations, and ensures continued fairness in how the budget is spent. This approach also provides for all classes to get more resources than they are currently getting.

The Board should recognize, however, that if the budget is set to acquire all cost-effective energy efficiency then no policy constraints would be required. If the efficiency measure is cost-effective, the budget would pay for it and it would be obtained. Acquiring all cost-effective efficiency assumes that all efficiency that would otherwise be specifically targeted for low income or specific geographic areas would be included. No one is suggesting that measures that are not cost effective be obtained.

Since tripling the budget would provide close to all cost-effective efficiency measures, the policy constraints are probably not needed. Nonetheless, they provide some additional assurance of fairness and as a practical matter should continue to be included. If the Board decides that policy constraints are not needed, these indicators are still useful to measure the success of the programs and enable future Boards to judge whether constraints are needed. Similarly, if the constraints are imposed now, in the future they may become vestigial and can then be used as indicators rather than constraints.

Conclusion

Overall, CLF and VPIRG recommend:

- Tripling the efficiency utility budget to a level of $52.5 million per year by 2008.
- Amortization of the budget over thirteen years.
- Establishing a three year budget for the efficiency utility.
- Maintaining existing policy constraints on the first 2/3 of the new budget.

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